(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau

(43) International Publication Date

22 January 2004 (22.01.2004)





PCT

(10) International Publication Number WO 2004/007205 A1

(51) International Patent Classification7: 2/055

B41J 2/045,

[JP/JP]; 5-8-201, Saiwaicho, Atsugi-shi, Kanagawa 243-0012 (JP).

(21) International Application Number:

PCT/JP2003/007992

(74) Agent: ITOH, TADAHIKO; 32nd Floor, Yebisu Garden Place Tower, 20-3, Ebisu4-chome, Shibuya-ku, Tokyo 150-6032 (JP).

(22) International Filing Date: 24 June 2003 (24.06.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 2002-206377

16 July 2002 (16.07.2002) JP

(84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(81) Designated States (national): CN, KR, SG, US.

(71) Applicant (for all designated States except US): RICOH COMPANY, LTD. [JP/JP]; 3-6, Nakamagome 1-chome,

Published:

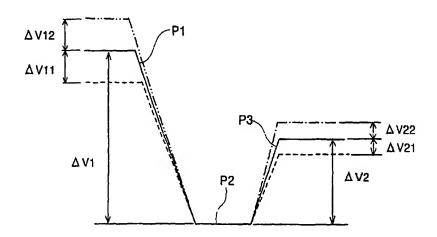
with international search report

Ohta-ku, Tokyo 143-8555 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): NODA, Hiroshi For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HEAD CONTROLLER, INKJET RECORDING APPARATUS, AND IMAGE RECORDING APPARATUS THAT PREVENT DEGRADATION IN IMAGE QUALITY DUE TO ENVIRONMENTAL TEMPERATURE CHANGES



(57) Abstract: A head controller controls pressure creating means for contracting and expanding the volume of a pressurizing compartment communicating with a nozzle of a droplet discharging head. Drive waveform generating means outputs a drive pulse including a first waveform element expanding the compartment, a second waveform element maintaining the expanded state of the compartment, and a third waveform element contracting the compartment so that droplets are discharged. When a first potential difference is a potential difference between the first waveform element at the beginning of the expansion and the second waveform element, and the second potential difference is a potential difference between the third waveform element at the end of the contraction and the second waveform element, the difference between the firstand second potential differences is decreased when environmental temperature is higher than a first predetermined temperature, and increased when the temperature is lower than a second predetermined temperature.

			·
A. CLASSIFICATION OF SUBJECT MATTER Int.Cl' B41J 2/045 B41J 2/055			
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)			
Int.Cl' B41J 2/045 B41J 2/055			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Japanese Utility Model Gazette 1926-1996. Japanese Publication of Unexamined Utility Model Applications 1971-2003, Japanese Registered Utility Model Gazette 1994-2003, Japanese Gazette Containing the Utility Model 1996-2003			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where app	propriate, of the relevant passages	Relevant to claim No.
x	JP 2001-205798 A (SEIKO EPSON CORPORATION) 2001.07.31, whole document, Fig.1-11		1-9
ļ	(Family:none)	Flg.1-11	
	· -		
x	JP 11-20164 A (SEIKO EPSON	1-9	
	1999.01.26, whole document, Fig.1-10 (Family:none)		
PX JP 2002-240273 A (SEIKO EPS 2002.08.28, whole document,		-	1,3,4,6,7,9
	(Family:none)	1 19.1 11	
	·		
Further documents are listed in the continuation of Box C. See patent family annex.			
 Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand to be of particular relevance 			
"E" earlier application or patent but published on or after the international filing date		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be	
"O" document referring to an oral disclosure, use, exhibition or other means		considered to involve an inventive combined with one or more other such being obvious to a person skilled in the	step when the document is documents, such combination
	ent published prior to the international filing date but later than ority date claimed	"&" document member of the same patent	family
Date of the actual completion of the international search Date of mailing of the international search report			
13.08.03		26.08.0 3	
3		Authorized officer	②P 9415
Japan Patent Office		DAICHI TAKAMATSU(
3-4-3, Kas	umigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Telephone No. +81-3-3581-1101 B	Ext. 3261